#4

SEQUENCE LISTING

<110> Adler, David A.
Holloway, James L.
Baindur, Nand
Beigel-Orme, Stephanie
Sheppard, Paul O.

<120> NOVEL BETA-DEFENSINS

<130> 97-44D1

<140> US 10/091,166
<141> 2002-03-05

<150> US 09/636,399
<151> 2000-08-10

<150> US 09/344,097
<151> 1999-06-25

<150> US 09/150,786
<151> 1998-09-10

<150> US 60/064,294
<151> 1997-11-05

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cct gtt cca ggt cat gga gga atc ata aac aca tta cag aaa tat tat   96
Pro Val Pro Gly His Gly Gly Ile Ile Asn Thr Leu Gln Lys Tyr Tyr
            20                  25                  30

tgc aga gtc aga ggc ggc cgg tgt gct gtg ctc agc tgc ctt cca aag   144
Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys
        35                  40                  45

gag gaa cag atc ggc aag tgc tcg acg cgt ggc cga aaa tgc tgc cga   192
Glu Glu Gln Ile Gly Lys Cys Ser Thr Arg Gly Arg Lys Cys Cys Arg
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aga aagaaataaa aaccctgaaa catg                                   219
Arg
 65
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<212> PRT
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            20   25   30
Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys
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Arg
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            20   25   30

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ggnathatha ayacnytnca raartrrnnn tgymgngtnm gnggnggnmg ntgygcngtn 120
ytnwsntgyy tnccnaarga rgarcarath ggnaartgyw snacnmgngg nmgnaartgy 180
tgymgnmgna araartrraa rccntrraay atg   213

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<220>
<223> Oligonucleotide ZC14741

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gagcacttgc cgatctgttc 20

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ccaggtcatg gaggaatcat 20

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<400> 7
ggaggaatca taaacaca 18

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gccgatctgt tcctcctt 18

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tgttctgcat ggtgagaggc attggaatga tgcatcagaa aacatgtcat aatgtcatca 120
ctgtaatatg acaagaattg cagctgtggc tggaaccttt ataaagtgac caagcacacc 180
ttttcatcca gtctcagcgt ggggtgaagc ctagcagct atg agg atc cat tat 234
Met Arg Ile His Tyr
1 5

ctt ctg ttt gct ttg ctc ttc ctg ttt ttg gtg cct gtt cca ggt cat 282
Leu Leu Phe Ala Leu Leu Phe Leu Phe Leu Val Pro Val Pro Gly His
10 15 20

gga gga atc ata aac aca tta cag aaa tat tat tgc aga gtc aga ggc 330
Gly Gly Ile Ile Asn Thr Leu Gln Lys Tyr Tyr Cys Arg Val Arg Gly
25 30 35

ggc cgg tgt gct gtg ctc agc tgc ctt cca aag gag gaa cag atc ggc 378

Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Gly
40 45 50

aag tgc tcg acg cgt ggc cga aaa tgc tgc cga aga aag aaa 420
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55 60 65

taaaaaccct gaaacatg 438

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20 25 30
Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys
35 40 45
Glu Glu Gln Ile Gly Lys Cys Ser Thr Arg Gly Arg Lys Cys Cys Arg
50 55 60
Arg Lys Lys
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cayggnggna thathaayac nytncaraar trrnnntgym gngtnmgngg nggnmgntgy 120
gcngtnytnw sntgyytncc naargargar carathggna artgywsnac nmgnggnmgn 180
aartgytgym gnmgnaaraa rtrraarccn trraayatg 219

<210> 12
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<220>
<223> Oligonucleotide ZC15591

<400> 12
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<210> 13
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<220>
<223> Oligonucleotide ZC15589

<400> 13
gaacaggcac caaaaacagg aagag 25

<210> 14

<211> 37
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<400> 14
Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala Val Leu Ser
1 5 10 15
Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr Arg Tyr Arg
20 25 30
Lys Cys Cys Arg Arg
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<223> leucine, isoleucine, valine, phenylalanine, or
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<400> 15
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1 5 10 15
Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
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<210> 16
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<221> VARIANT
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<223> leucine, isoleucine, valine, phenylalanine, or
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<400> 16
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<210> 17
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<221> VARIANT
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<223> leucine, isoleucine, valine, phenylalanine, or
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20 25

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1 5 10 15
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20 25 30
Lys Cys Cys Arg Arg Lys
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20 25 30
Lys Cys Cys Arg Arg Lys Lys
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20 25 30
Ser Thr Arg Tyr Arg Lys Cys Cys Arg Arg Lys Lys
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Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys
20 25 30
Ser Thr Arg Tyr Arg Lys Cys Cys Arg Arg Lys
35 40

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<211> 42
<212> PRT
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<220>
<223> Defensin polypeptide

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Ser Thr Arg Tyr Arg Lys Cys Cys Arg Arg
35 40

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Thr Arg Tyr Arg Lys Cys Cys Arg Arg Lys Lys
35 40

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Thr Arg Tyr Arg Lys Cys Cys Arg Arg Lys
35 40

<210> 25
<211> 41
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20 25 30
Thr Arg Tyr Arg Lys Cys Cys Arg Arg
35 40

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20 25 30

Tyr Arg Lys Cys Cys Arg Arg Lys Lys
35 40

<210> 30
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20 25 30
Tyr Arg Lys Cys Cys Arg Arg Lys
35 40

<210> 31
<211> 39
<212> PRT
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<220>
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<400> 31
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20 25 30
Tyr Arg Lys Cys Cys Arg Arg
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<210> 32
<211> 40
<212> PRT
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<220>
<223> Defensin polypeptide

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1 5 10 15
Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr Arg Tyr
20 25 30
Arg Lys Cys Cys Arg Arg Lys Lys
35 40

<210> 33
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<213> Artificial Sequence

<220>
<223> Defensin polypeptide

<400> 33
Leu Gln Lys Tyr Tyr Cys Arg Val Arg Tyr Tyr Arg Cys Ala Val Leu
1 5 10 15
Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr Arg Tyr
20 25 30
Arg Lys Cys Cys Arg Arg Lys

35

<210> 34
<211> 38
<212> PRT
<213> Artificial Sequence

<220>
<223> Defensin polypeptide

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Ser Cys Leu Pro Lys Glu Glu Gln Ile Tyr Lys Cys Ser Thr Arg Tyr
20 25 30
Arg Lys Cys Cys Arg Arg
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<210> 35
<211> 49
<212> PRT
<213> Artificial Sequence

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<400> 35
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1 5 10 15
Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu
20 25 30
Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
35 40 45
Lys

<210> 36
<211> 48
<212> PRT
<213> Artificial Sequence

<220>
<223> Defensin polypeptide

<221> VARIANT
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Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu
20 25 30
Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
35 40 45

<210> 37
<211> 48
<212> PRT

<213> Artificial Sequence

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Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys
20 25 30
Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
35 40 45

<210> 38
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<212> PRT
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<221> VARIANT
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methionine

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Gly His Gly Gly Ile Ile Asn Thr Leu Gln Leu Tyr Tyr Cys Arg Val
1 5 10 15
Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys
20 25 30
Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
35 40 45

<210> 39
<211> 47
<212> PRT
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20 25 30
Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
35 40 45

<210> 40
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<212> PRT
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<223> Defensin polypeptide

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1 5 10 15
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20 25 30
Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
35 40 45

<210> 41
<211> 46
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<223> leucine, isoleucine, valine, phenylalanine, or
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Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly
20 25 30
Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
35 40 45

<210> 42
<211> 45
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<213> Artificial Sequence

<220>
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<221> VARIANT
<222> (42)...(42)
<223> leucine, isoleucine, valine, phenylalanine, or
methionine

<400> 42
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1 5 10 15
Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly
20 25 30
Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
35 40 45

<210> 43
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<222> (41)...(41)
<223> leucine, isoleucine, valine, phenylalanine, or
methionine

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20 25 30
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<210> 44
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<223> leucine, isoleucine, valine, phenylalanine, or
methionine

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20 25 30
Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
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<210> 45
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20 25 30
Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
35 40

<210> 46
<211> 43
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<221> VARIANT
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methionine

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1 5 10 15
Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met
20 25 30
Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
35 40

<210> 47
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<220>
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<221> VARIANT
<222> (39)...(39)
<223> leucine, isoleucine, valine, phenylalanine, or
methionine

<400> 47
Ile Asn Thr Leu Gln Leu Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys
1 5 10 15
Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser
20 25 30
Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
35 40

<210> 48
<211> 42
<212> PRT
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<220>
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<221> VARIANT
<222> (39)...(39)
<223> leucine, isoleucine, valine, phenylalanine, or
methionine

<400> 48
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1 5 10 15
Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser
20 25 30
Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
35 40

<210> 49
<211> 42
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<213> Artificial Sequence

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<221> VARIANT
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<223> leucine, isoleucine, valine, phenylalanine, or
methionine

<400> 49
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Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr
            20                  25                  30
Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
        35                  40
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<400> 50

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            20                  25                  30
Arg Gly Arg Lys Cys Xaa Arg Arg Lys
        35                  40
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<222> (37)...(37)
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 1               5                   10                  15
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            20                  25                  30
Gly Arg Lys Cys Xaa Arg Arg Lys Lys
        35                  40
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<210> 52
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<400> 52

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 1               5                   10                  15
Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg
            20                  25                  30
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Gly Arg Lys Cys Xaa Arg Arg Lys
35 40

<210> 53
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1 5 10 15
Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly
20 25 30
Arg Lys Cys Xaa Arg Arg Lys Lys
35 40

<210> 54
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<400> 54
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1 5 10 15
Ser Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly
20 25 30
Arg Lys Cys Xaa Arg Arg Lys
35

<210> 55
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<220>
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<221> VARIANT
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<400> 55
Gln Leu Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser
1 5 10 15
Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg
20 25 30
Lys Cys Xaa Arg Arg Lys Lys
35

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<223> leucine, isoleucine, valine, phenylalanine, or
methionine

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Gln Leu Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser
1 5 10 15
Cys Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg
20 25 30
Lys Cys Xaa Arg Arg Lys
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<223> leucine, isoleucine, valine, phenylalanine, or
methionine

<400> 57
Leu Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys
1 5 10 15
Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys
20 25 30
Cys Xaa Arg Arg Lys Lys
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methionine

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Leu Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys
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Leu Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys
20 25 30
Cys Xaa Arg Arg Lys
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<221> VARIANT
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<223> leucine, isoleucine, valine, phenylalanine, or
methionine

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Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu
1 5 10 15
Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys
20 25 30
Xaa Arg Arg Lys Lys
35

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methionine

<400> 60
Tyr Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu
1 5 10 15
Pro Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys
20 25 30
Xaa Arg Arg Lys
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<221> VARIANT
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<223> leucine, isoleucine, valine, phenylalanine, or
methionine

<400> 61
Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro
1 5 10 15
Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa
20 25 30
Arg Arg Lys Lys
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methionine

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Tyr Cys Arg Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro
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Lys Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa
20 25 30
Arg Arg Lys
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methionine

<400> 63
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Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg
20 25 30
Arg Lys Lys
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methionine

<400> 64
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Glu Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg
20 25 30
Arg Lys

<210> 65
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methionine

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Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg
20 25 30
Lys Lys

<210> 66
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methionine

<400> 66
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Glu Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg
20 25 30
Lys

<210> 67
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<221> VARIANT
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methionine

<400> 67
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Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
20 25 30
Lys

<210> 68
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<223> leucine, isoleucine, valine, phenylalanine, or

methionine

<400> 68
Val Arg Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu
1 5 10 15
Cys Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
20 25 30

<210> 69
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<220>
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<223> leucine, isoleucine, valine, phenylalanine, or methionine

<400> 69
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1 5 10 15
Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
20 25 30

<210> 70
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<220>
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<223> leucine, isoleucine, valine, phenylalanine, or methionine

<400> 70
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1 5 10 15
Ile Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
20 25 30

<210> 71
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<220>
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<221> VARIANT
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<223> leucine, isoleucine, valine, phenylalanine, or methionine

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Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys Lys
20 25 30

<210> 72
<211> 30
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<221> VARIANT
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<223> leucine, isoleucine, valine, phenylalanine, or methionine

<400> 72
Gly Gly Arg Cys Ala Val Leu Ser Cys Leu Pro Lys Glu Glu Cys Ile
1 5 10 15
Gly Lys Met Ser Thr Arg Gly Arg Lys Cys Xaa Arg Arg Lys
20 25 30